UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,151	12/27/2000	John D. Marshall	13149/3	8710

7590 01/11/2008

Craig A. Summerfield
Brinks Hofer Gilson & Lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER	
FLANDERS, ANDREW C	
ART UNIT	PAPER NUMBER
2615	

MAIL DATE	DELIVERY MODE
01/11/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/751,151	MARSHALL ET AL.	
	Examiner	Art Unit	
	Andrew C. Flanders	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,36-38,71-73 and 106-115* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,36-38,71-73 and 106-115* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 14 September 2007 have been fully considered but they are not persuasive.

Applicant alleges:

> Best fails to disclose each scale factor is based on an analysis of the entirety of each of said at least two digital audio files relative to the other digital audio files in their entirety. Best scales as a function of a single film (i.e. a single audio input) with multiple sequences spliced onto the single film. Best does not teach scaling as a function of multiple films 7, 10, and 15. Best teaches multiple films 7, 10, and 15. Each film has different sound sequences (col. 2, lines 25 - 40). For example, as shown below, film 7 may have sound sequence #I and sound sequence #2. The recording of sound sequences "usually occurs at different times and under different conditions so that although an attempt is made to maintain a certain uniform recording level, it frequently happens that the average levels for the various sound sequences vary to a considerable degree" (col. 3, lines 8 - 10). The embodiment disclosed by Best "is adapted to automatically equalize the various sound levels from the film 7 before they reach the mixing panel 30" (col. 3, lines 20 - 24). In other words, the teachings of Best are directed to adjusting the sound sequences of a single film relative to the other sound sequences of that film. The Examiner stated: "the average is determined between the sound sequence; i.e. with respect to each other" (Office action dated May 14, 2007; page 5). For example, Best would consider sound sequence # 1 and sound sequence #2 on film 7 and determine an average level ("predetermined average level") for the two sound sequences. Best does not teach comparing the sound sequences on film 7 to the sound sequences on film 10 or film 15. Therefore, claim 1 is allowable over the teachings of Best.

Examiner respectfully disagrees. Applicant is essentially arguing that for Best to make obvious Applicant's claimed invention, films 7, 10 and 15 need to be adjusted relative to each other. Further, Applicant alleges that Best only teaches that film 7's individual sequences are adjusted. It may seem after a quick review of the patent that Best is not disclosing adjusting these sequence relative to each other, however a thorough review indicates otherwise. Examiner submits that Best's patent is quite vague, however, it should be clear after reading below, that Best at least makes obvious this teaching, if not anticipates.

First, Best teaches in col. 4 liens 1 - 5 that the equalization may also be applied to additional channels such as 32 and 33. Channels 32 and 33 are the outputs from films 10 and 15. Next, Best discloses that each of films 7, 10 and 15 may contain differing noises, for example, 7 "may contain all dialogue and musical passages recorded" film 10 "may contain certain types of background effects, such as crowd noises and the like" and film 15 "may contain other types of background sounds such as airplane noises, hoofbeats, etc." Best also realizes that these levels need to be adjusted properly to create the desired listening experience, as shown in cols. 1 and 3. Best also acknowledges the mixing operation can suffer due to human error and thus strives to "reproduce without manual attention." While Best is vague, and does not disclose explicitly adjust between 7, 10 and 15, it is at least made obvious by Best's remaining disclosure. Best states that the adjustments may be placed on all channels, each film has different sounds which need to be equalized, and finally, it is preferable that this equalization is done without manual attention.

Furthermore, assuming Applicant is correct in the summary provided, interpreting Best in another manner will still read upon the claimed limitations. Assuming Best only determines the scale factors between sequences in the same reel (to which the Examiner does not necessarily agree), Best still discloses automatically comparing two audio sequences in their entirety to adjust them accordingly. While they may be part of the same reel/track, there is no reason that this cannot be applied to the multiple sequences/tracks in the Heyl device.

The remaining arguments in section II are not persuasive for the same reasons as stated above.

Applicant further in states in section III that one skiled in the art would not combine the teachings of Heyl and Best.

Examiner respectfully disagrees. As shown in the final rejection, Heyl discloses that any known technique may be used to set the weights in col. 1. Best discloses one of many "known" techniques of determining a weight/scale factor for a particular audio sequence/track. Thus, since Best teaches a way of determining a scale factor, it would have been obvious to apply this known technique to Heyl's system.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3, 36-38, 71-73, 106-115 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-3, 36-38 and 106-115 claim a seemingly patentable process and machine in a method and an apparatus. However, upon a close review, the claims can be interpreted as a judicial exception as claiming nothing more than a computer program. This is evidenced by claim 71 which claims a computer program using the same steps as the method and the apparatus claims. For the judicial exception to be statutory, the method and apparatus claims or specification must provide a practical application either in the form of a physical transformation or by producing a useful, tangible and concrete result. Neither is present in this application.

Claims 71-73 appear to claim a statutory "computer readable medium claim." However, a review of the specification disclsoses on page 14 that "any media" can be used. One type of media is transmission media which encompasses RF, fiber optic, and any other type of network communication media. These media are nothing more than signals and signals are held to be non statutory subject matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 36, 38, 73, 78, 106, 107 and 109 – 115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyl (U.S. Patent 5,774,567) in view of Best (U.S. Patent 2,265,097).

Regarding **Claims 1 and 78**, Heyl discloses:

A method for automatic digital audio mixing of at least two digital audio files (Figs. 2 and 3), comprising:

reading at least two said digital audio files (Fig. 3 the various inputs which are then converted to digital form in elements 102 – 108);

determining scale factors for scaling each of said digital audio files (i.e. the weight values are preferably determined by application programs executed by the computer system; col. 4 lines 40 – 50);

applying each said scale factor to the entirety of each of said digital audio files respectively to create scaled digital audio files (i.e. the level adjustment circuits in Fig. 3 apply weights to each of the digital sequences and then output the result);

combining each of said scaled digital audio files into a single audio recording output as a digital file (Fig. 3 the various outputs).

Heyl does not explicitly disclose automatically determining the scale factors based on an analysis of said at least two digital audio files by a digital processing unit; wherein each scale factor is based on an analysis of the entirety of each of said at least two digital audio files relative the other digital audio files in their entirety or outputting on a storage medium.

Best discloses automatically varying the amplitude level of various sound sequence between the output of a sound reproducer and a sound recorder in accordance with the predetermined average level of the respective sound sequences being reproduced; col. 2 lines 1 – 6; col. 1 lines 43 - 47.

Heyl discloses that the weights may be set according to techniques well known in the art. Applying the teachings of Best to set the weight values of Heyl discloses:

automatically determining (calculating the predetermined averages in Best) the scale factors (setting the weights in Heyl based on Best's averages) based on an analysis of said at least two digital audio files by a digital processing unit (Best's average determined using by Heyl's computer system); wherein each scale factor is based on an analysis of the entirety of each of said at least two digital audio files relative to the other digital audio files in their entirety (the average of each sequence is determined, to determine an average of a sequence, the entire sequence must be examined, further the average is determined between the sound sequence; i.e. with respect to each other).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the average determination technique of Best to set the weights in the

computer system of Heyl. Heyl discloses that any known techniques may be used, Best discloses one particular technique and states that it allows the avoidance of an output in which the average sound level varies from sequence to sequence; col. 1.

Furthermore, Examiner takes official notice that recording the output onto a recording medium is notoriously well known in the art. It is desirable to do so to save the resultant output for later use.

Regarding **Claims 36, 107, 109, 110 and 111**, in addition to the elements stated above in claim 1, the combination does not explicitly disclose the scale factors are based on an analysis of a root mean square, peak absolute value, or the combination thereof.

However, Examiner takes official notice that scaling signals based on a root mean squared (RMS) or peak absolute value is notoriously well known in the field of audio. For example Smyth (U.S. 5,978,762) discloses scaling samples by multiplying with the RMS or peak scale factors. One would be motivated to do so to use a notoriously well known measurement technique (i.e. RMS and peak value) to reliably modify the audio levels in the combination.

Regarding **Claims 3, 38 and 73**, in addition to the elements stated above regarding claims 1, 36 and 71, the combination further discloses:

receiving one of said at least two digital audio files from a user (the inputs of Heyl are not explicitly disclosed to be received from a user, however, they must be provided

to the system in some manner. Whether they are applied automatically or manually, at some point the data must be created or applied by a user.)

Regarding **Claim 106**, Heyl discloses:

A method for mixing two digital audio files (Figs. 2 and 3), the method comprising:

inputting a first digital audio file in its entirety and a second audio file in its entirety (Fig. 4 the inputs);

generating first and second scale factors and a maximum value allowed by an output audio file format (i.e. the weight values determined by the computer system; col. 4);

generating a first scaled digital audio file by applying the first scale factor to the originally input first digital audio file (Fig 3 element 110 and its output);

generating a second scaled digital audio file, by applying the second scale factor to the originally input second digital audio file (Fig. 3 element 112 and its output);

generating the combined scaled digital audio file by combining the first scaled digital audio file and the second scaled digital audio file (output of adders Fig. 3).

Heyl does not explicitly disclose calculating audio file characteristic values for the first and second digital audio files, basing scale factors on those characteristics or the second scaled file having an output level that is substantially equivalent to an output level of the first scaled digital audio file.

Best discloses automatically varying the amplitude level of various sound sequence between the output of a sound reproducer and a sound recorder in accordance with the predetermined average level of the respective sound sequences being reproduced; col. 2 lines 1 – 6; col. 1 lines 43 - 47.

Heyl discloses that the weights may be set according to techniques well known in the art. Applying the teachings of Best to set the weight values of Heyl discloses:

calculating audio file characteristic values for the first and second digital audio files (i.e. calculating the predetermined averages of Heyl's audio files as taught by Best using the computer system in Heyl);

basing scale factors on those characteristics or the second scaled file (i.e. determining the weights in Heyl using the predetermined averages); and

the second scaled file having an output level that is substantially equivalent to an output level of the first scaled digital audio file (i.e. maintaining a uniform average level as taught by Best in Heyl's system).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the average determination technique of Best to set the weights in the computer system of Heyl. Heyl discloses that any known techniques may be used, Best discloses one particular technique and states that it allows the avoidance of an output in which the average sound level varies from sequence to sequence; col. 1.

Regarding **Claim 112**, in addition to the elements stated above regarding claim 1, the combination further discloses:

bringing up an overall level of the single audio recording output to a maximum level (i.e. raising the lower level inputs to the maintain a uniform average, the average being the max level).

Regarding **Claim 113**, in addition to the elements stated above regarding claim 112, the combination further discloses:

wherein a peak of the overall level does not exceed a maximum level supported by a data format (i.e. the levels are maintained to a uniform average, thus they will not exceed this and it can be considered a max level).

Regarding **Claim 114**, in addition to the elements stated above regarding claim 1, the combination further discloses:

wherein the single audio recording output is a modification of the at least digital audio files and is unable to be divided back into the individual digital audio signals (i.e. the outputs in Heyl are output in one of many ways, two being an analog or digital representation, which would not be able to be separated after combination).

Regarding **Claim 115**, Heyl disclsoes:

A method for mixing and mastering one or more audio files (Figs. 2 and 3), the method comprising:

analyzing the one or more audio files with a digital processor (i.e. the weight values are preferably determined by application programs executed by the computer system; col. 4 lines 40 – 50);

determining, with the digital processor, one or more scale factors for the one or more audio files, the one or more scale factors based on the analysis of the one or more audio files (i.e. the weight values are preferably determined by application programs executed by the computer system; col. 4 lines 40 – 50);

applying each of the one or more scale factors to the entirety of the one or more audio files respectively (weight values W1-W4 are applied to the audio and then output; figs 2 and 3).

Heyl does not explicitly disclose analyzing and deterring based on an entirety of the two digital audio files, identifying a peak value and mean level for each of the one or more audio files, or the one or more scale factors operable to adjust the identified mean levels of the one or more audio files to the same level and adjust the one or more audio files to a recording medium maximum level.

Best discloses automatically varying the amplitude level of various sound sequence between the output of a sound reproducer and a sound recorder in accordance with the predetermined average level of the respective sound sequences being reproduced; col. 2 lines 1 – 6; col. 1 lines 43 - 47.

Heyl discloses that the weights may be set according to techniques well known in the art. Applying the teachings of Best to set the weight values of Heyl discloses:

analyzing and deterring based on an entirety of the two digital audio files(Best's average determined using by Heyl's computer system; the average of each sequence is determined, to determine an average of a sequence, the entire sequence must be examined, further the average is determined between the sound sequence; i.e. with respect to each other), the one or more scale factors operable to adjust the identified mean levels of the one or more audio files to the same level (i.e. maintaining a uniform average level as taught by Best in Heyl's system).

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the average determination technique of Best to set the weights in the computer system of Heyl. Heyl discloses that any known techniques may be used, Best discloses one particular technique and states that it allows the avoidance of an output in which the average sound level varies from sequence to sequence; col. 1.

The combination does not explicitly disclose identifying a peak value and mean level for each of the one or more audio files and adjust the one or more audio files to a recording medium maximum level.

However, Examiner takes official notice that scaling signals based on a root mean squared (RMS) or peak absolute value is notoriously well known in the field of audio. For example Smyth (U.S. 5,978,762) discloses scaling samples by multiplying with the RMS or peak scale factors. One would be motivated to do so to use a notoriously well known measurement technique (i.e. RMS and peak value) to reliably modify the audio levels in the combination to produce a recording with a higher quality sound.

Claims 2, 37 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Heyl (U.S. Patent 5,774,567) in view of Best (U.S. Patent 2,265,097) and in further view of Frederick (U.S. Patent 5,768,126).

Regarding **Claims 2, 37 and 72**, in addition to the elements stated above regarding claims 1, 36, and 71, the combination fails to disclose wherein said method is performed within a server device operatively coupled over a network to a client device; wherein said automatic digital audio mixing is resident on the server and initiated upon receiving one of said at least two digital audio files from said client device.

Frederick discloses mixing software which can process streams of digital audio samples originating from a local area network; col. 1 lines 19 – 21, audio data 470 is received from the network interface and network audio data is always active in this example, audio received from the network contributes to the network and is mixed to be made audible; col. 13 lines 34 – 40.

Applying the mixer of the combination above to a computer based audio mixer as to receive audio from a network as taught by Frederick would thus perform said method within a server device operative coupled over a network to a client device. Since the network audio is always active the said automatic digital audio mixing is resident on the server and initiated upon receiving one of said at least two digital audio files from said client device.

It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the mixer taught by the combination to the computer based mixer taught by Frederick. One would have been motivated to do so to create a computer audio mixer that achieves multi-stream audio functionality without interrupting existing application programs being run; col. 3 lines 24 – 28 of Frederick.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Flanders whose telephone number is (571) 272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7546. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SINH TRAN
SUPERVISORY PATENT EXAMINER

acf